

# Revised Technical Specifications for PB 19-01-04

| Item | Specification  | Statement of Compliance  |
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|      | <b>LOT 1. RCFS</b>   |  |
| 1.   | Multi-channel pipette, 0.5-10 $\mu$ L adjustable volume, 8-channel, autoclavable, with calibration certificate; with grid and lock; ergonomically designed; with control button and ejector; increments 0.02 ul; accuracy at most $\leq 12\%$ ; precision at most $\leq 8\%$ | Bidders must state here either “Comply” or “Not Comply” against each of the individual parameters of each Specification stating the corresponding performance parameter of the equipment offered. Statements of “Comply” or “Not Comply” must be supported by evidence in a Bidders Bid and cross-referenced to that evidence. Evidence shall be in the form of manufacturer’s un-amended sales literature, unconditional statements of specification and compliance issued by the manufacturer, samples, independent test data etc., as appropriate. A statement that is not supported by evidence or is subsequently found to be contradicted by the evidence presented will render the Bid under evaluation liable for rejection. A statement either in the Bidders statement of compliance or the supporting evidence that is found to be false either during Bid evaluation, post-qualification or the execution of the Contract may be regarded as fraudulent and render the Bidder or supplier liable for prosecution subject to the provisions of <b>ITB</b> Clause 3.1 (a)(ii) and/or <b>GCC</b> Clause 2.1(a)(ii). |
| 2.   | pH Meter<br>General Specs: with swivel arm, pH and temperature electrode, ATCF   |  |

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|   | <p>probe, integral electrode holder, adapter (suitable for 220V), 3 calibration buffers; with calibration certificate; 1-year warranty pH specifications: pH range: at least -2.00 to 16.000 pH; pH accuracy: <math>\pm 0.01</math> pH/<math>\pm 0.002</math> pH; pH resolution: 0.00 pH/0.01 pH; with temperature compensation; temperature specs: temperature range: around -10 to 100 °C / -4.0 to 248.0 °F; temperature resolution: 0.1 °C/ 0.1 °F; temperature accuracy: <math>\pm 0.5</math> °C/ 0.9 °F; °C/ °F: Yes</p>   |  |
| 3 | <p>Analytical Balance with internal calibration;<br/>Capacity: 220g ;<br/>Resolution/Readability: 0.1 mg;<br/>Internal calibration: yes;<br/>Pan size: <b>90mm diameter</b>;<br/>Main Body Dimension(mm): 213(W) 356(D) 338(H);<br/>Power Requirement: 12V, 1A, 220V;<br/>Minimum Display: 0.1mg;<br/>Weight (kg) approx: 6.2kg<br/><b>With one year free calibration service</b></p>  |  |
|   | <b>LOT 2 CPD</b>   |  |
| 1 | <p>Autoclave (47-50L Capacity)<br/>Operating temperature stabilization temp: 105-128 degree Celsius;<br/>Temp. controller – PID control by microprocessor;<br/>temp. display – digital display by green LED and setting via keys;<br/>safety device – self-diagnostic functions (detection sensor error , SSR short circuit, heater disconnect, faulty main relay, dry operation),<br/>safety valve, electric leakage breaker, drain bottle set-fail switch;<br/>power source – 220V;<br/>accessories – 2 pcs stainless steel mesh basket, drain bottle and condensation collection container;</p> |  |
| 2 | <p>Shaker – Thermostatic Shaking Incubator</p>   |  |

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|    | <ul style="list-style-type: none"> <li>• PID controller, LCD ID display, forced convection, rotary shaking mode,</li> <li>4°C-60°C temperature range,</li> <li>±0.1°C temperature accuracy,</li> <li>±0.25°C temp. uniformity,</li> <li>30-400 rpm rotating speed,</li> <li>CFC-Free, 0-500 hours timing range ,</li> <li>420x400 mm shaking plate size,</li> <li>460x500x350mm internal size.</li> <li>• Safety functions: audio and visual alarm for over-temperature;</li> <li>Alarm for over-speeds;</li> <li>Independent over-temperature protector; Shutdown protection for door opening; Leakage or over-current protection.</li> <li>• With one unit of Auto Voltage Regulator, with installation</li> <li>• Power supply: 220V</li> </ul> |  |
| 3. | <p>Analytical Balance with internal calibration;</p> <p>Capacity: 220g ;</p> <p>Resolution/Readability: 0.1 mg;</p> <p>Internal calibration: yes;</p> <p>Pan size: <b>90mm diameter;</b></p> <p>Main Body Dimension(mm): 213(W) 356(D) 338(H);</p> <p>Power Requirement: 12V, 1A, 220V;</p> <p>Minimum Display: 0.1mg;</p> <p>Weight (kg) approx: 6.2kg</p> <p><b>With one year free calibration service</b></p>   |  |
|    | <b>ASPPD</b>   |  |
| 1. | <p>Supply, delivery and installation of one (1) unit Fumehood</p> <p><b>4-ft wide working laboratory fumehood with built-in blower and acid resistant cabinet</b></p> <p>Specifications:</p> <p><b>Dimension: 48 in (W) x 31.7 in (D) x 66 in (H)</b></p>  |  |

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| <p><b>Air velocity-0.3 m/s (60 fpm) and 0.5 m/s (100 fpm)</b></p> <p>Sash: made of tempered safety fiber glass</p> <p>Electrical requirement: 220V</p> <p>Ducting: must be resistant to strong acid and organic solvents (vapor-proof) corrosion-resistant exhaust blower with adjustable sheave</p> <p>By-pass airflow design</p> <p>Built-in belt-driven, corrosion resistant exhaust blower with adjustable sheave, molded thermoplastic housing and non-sparking, coated aluminum impeller</p> <p>Eco-foil air foil with aerodynamic clean-sweep airflow openings</p> <p>Cord-keeper slots on left and right side of air foil</p> <p>Glacier powder-coated steel exterior</p> <p>One-piece molded fiberglass liner and pre-set baffle with flame spread less than 25 per ASTM E-84</p> <p>Tempered safety glass vertical-rising sash with powder-coated aluminum sash handle</p> <p>37.5” high sightline from the work surface and header panel</p> <p>Removable front and side panels, and front service access panels for access to plumbing and electrical wiring.</p> <p>10.8” ID exhaust connection (4’ models); 12.8” exhaust connection (5’ and 6’ models)</p> <p>Conforms to the following regulations and standards:</p> |  |
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|    | <p>CFR 29, Part 1910, SEFA 1-2010<br/> NFPA 45-2011 ASTM E84-09C<br/> ASHRAE 110-1995, ANSI Z9.5-2011<br/> UL 61010-1 CAN/CSA C22.2 No.<br/> 61010.1 UL 1805 CE</p> <p>Conformity Marking (230 volt models)<br/> SEFA 8-2010, cabinet surface finish tests.</p> <p>Pre wired T8 fluorescent lighting with vapor-proof design, and ADA-compliant light and blower switches</p> <p>Two pre-plumbed service fixtures with forged brass valves, lower right side with brass tubing for gas and lower left side with copper tubing for cold water.</p> <p>Inclusion:</p> <ol style="list-style-type: none"> <li>1. Spill Stopper work surface</li> <li>2. Epoxy resin coated table surface</li> <li>3. Oval Polypropylene cupsink</li> <li>4. PVC trap</li> <li>5. 2 x acid &amp; vapor resistant storage cabinet</li> <li>6. 2 x acid vent kit</li> <li>7. Water gooseneck fixture kit</li> <li>8. Ducting and ducting works</li> <li>9. Provision of one unit 3 phase main breaker with box (30amp)</li> <li>10. Duplex electrical receptacle kit</li> <li>11. Calibration certificate</li> </ol> |  |
| 2. | <p>Leaf Porometer<br/> Operating Environment: 5 to 40 °C; 1 to 100% relative humidity with desiccant chamber<br/> Accuracy: 10%<br/> Sample Chamber Aperture: 6.35 mm (0.25 in)<br/> Measurement Range: 0 to 1,000 mmol/m<sup>2</sup> s<sup>-1</sup><br/> Measurement units: mmol/m<sup>2</sup>s, m<sup>2</sup>s/mol,s/m</p>   |  |

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|  | <p>Measurement time: 30 seconds (in auto mode)</p> <p>Microcontroller Dimensions: 15.8 x 9.5 x 3.3 cm (6.2 x 3.75 x 1.3 in)</p> <p>Data Storage: 4,095 measurements</p> <p>Data Retrieval: Direct via RS-232 3 2</p> <p>Porometer Keypad: Six-key, menu-driven</p> <p>Software: Leaf area porometer utility (included)</p> <p>Clock: 24-hour +/- one minute per month</p> <p>Sensor head cable length: 1.2 m (4 ft)</p> <p>Interface Cable: RS-232 serial cable (included)</p> <p>Power Supply: Four type "AA" batteries (included)</p> <p>Battery life: 3 years (battery drain in sleep mode less than 50uA)</p> <p>Desiccant: indicating DrieRite: 10-20 mesh</p> |  |
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